D.D. Kosambi

(1907 – 1966)

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Damodar Dharmananda Kosambi was one of the greatest scholar researchers of India. In fact, he was a versatile genius having mastery in different subjects such as mathematics, statistics, numismatics, History and Sanskrit literature. In each of these subjects he has written insightful and first rate articles and they were published in prestigious international journals. Though a mathematician by profession his work on ancient history and culture brought him name and fame internationally.

Kosambi was born on 31st July 1907 in Goa while it was under Portuguese rule. His father Acharya Dharmananda was known to be a close associate of Mahatma Gandhi and had a honorable place in the freedom movement.

Damodar had part of his school and university education in the USA. He started with Harward Grammar School in 1918. Thirst for knowledge and willingness to go to any length to acquire it were two most valuable virtues inherited by Damodar from his father. This was accompanied by a sharp intellect too.

Damodar was not a person who would be easily satisfied. He read extensively and studied the literature of many languages and acquired a good command over them. (Acquiring command over many languages that proved very useful to him in his later research work began while he was studying in this school).

He later joined the Cambridge High and Latin school in 1920. The climate in Cambridge was charged with science and technology. He could discern how the progress in these two fields enabled America to advance in leaps and bounds. Plenty of literature in science and technology was available. Excellent books were stacked in best of libraries, waiting to be read. What more could he expect? Endowed with a curiosity and an incredible speed in reading coupled with a photographic memory he read voraciously covering as many fields of knowledge as possible. Diagrams, charts, illustrations of latest development in science were rendered in simple form, easy to understand. In his own words, 'Innumerable outlines made it easy to learn something about every branch of science.' He made the best possible use of them all.

His pursuit of knowledge pervaded all the fields of life. His progress in sports and body building was as remarkable as that in intellectual achievements. He visited the gymnasium regularly and did a lot of weight - lifting and other exercises. Swimming, jogging, trekking and ice skating during winters were his additional pursuits. He was a member of the Cambridge Branch of American Boy Scouts. His enthusiastic participation won him a number of medals, especially the 'Eagle' – a coveted award in Scouts. As his younger sister Manorama relates, he had all these medals

stitched on the sleeve of the Scout Coat. His sleeve was overflowing with them when he returned to India.

He was admitted to the Harvard University without having to pass the entrance examination because of his rank in school final examination 1923. He also secured a scholarship.

One of his friends has observed that there was a single picture on the walls of his room and that was of Mahatma Gandhi. The racks were full of books in Greek, German, French and Italian languages apart from those of English. Apart from books of a serious nature, he was also fond of mystery books and he frequently went to cinema theatres.

His education in Harvard up to his graduation was quite unique. He was not interested in further education. Instead he began teaching mathematics and pursued his own independent research. He did not confine himself to the study of only a few subjects with an eye on post-graduate degree. The educational system of America, unlike ours has no water - tight compartments like Sciences, Arts, etc. One can opt from any number of subjects from science to sociology to history to languages for graduation. He took 18 courses in one year and completed all of them quite successfully.

He got his BA Degree with distinction in 1929. That was the period of great depression in American economy. In spite of his distinction he could not get a fellowship for higher studies.

On his return to India, Kosambi applied for the post of Professor of Mathematics in the Benaras Hindu University, got selected and appointed on a monthly salary of Rs.300/- with accommodation. He was not happy about the atmosphere in BHU and was looking for a change. He got a position in Aligarh Muslim University in 1931. He did not like this place either as it was also riddled with politics and he left it in 1932.

Kosambi returned to Pune in 1933 and joined Deccan Education Society's Fergusson College to teach Mathematics. He remained in Pune for the next 33 years till the end of his life. Whereas in Aligarh he got Rs. 300/- per month, in Pune his salary was only Rs.130/- per month.

Kosambi taught allied subjects like Applied Mathematics, Dynamics, Differential Geometry, Tensors, etc. to the under and post graduate students. His method of teaching was innovative but not useful for the examination - oriented education system. His students were not happy and complained against him. Eventually he had to resign from the Fergusson College in 1945.

Yet, during his tenure in the Ferguson College he published many papers on different subjects and became a world famous person. During the period 1930-38 all his articles were in the field of Mathematics.

The field of his research seems to have started expanding since 1939 and his articles covered research in various fields along with mathematics. This was the beginning of his path breaking fundamental research work that

spread his name and fame all over the world as an eminent Indian Scientist and Scholar. The various fields of research work were Sanskrit Literature, compiling critical editions of ancient Sanskrit Volumes, applying statistics in the study of ancient coins and fundamental research in Ancient Indian History and Historical Science, Archaeology, etc. This was not all. During this period he began writing critical articles on ancient and current events through a Marxist outlook of Historical materialism, articles on crucial linkage between science and society and such other articles aimed at social enlightenment.

He published a number of articles on Numismatics (study of coins). The deep study of the coins had revealed that they did not provide any definite information about even the kings of those days, leave alone subjects.

During the early 1940s he started writing book reviews and articles on science and social aspects of science which were published in the mouth - piece of the communist party. Some titles were 'The Function of Leadership in People's Movement', Linguistics' 'Production and Sales of Textiles' etc. A couple of books that brought him recognition were "Myth and Reality" and "Exasperating Essays."

QUIT INDIA MOVEMENT:

During the Quit India Movement in 1942, he gave shelter to a famous underground leader Achyut Patwardhan for a couple of days. As a result a secret service police man was posted to keep a watch on Kosambi's house. He helped freedom fighters with medicine and money. In those days, though he was in the Marxist's camp which opposed Gandhi's Quit India Movement, he sympathized with the movement. But when some students came with bombs for destroying buildings of the college he dissuaded them.

MEETS HOMI BHABHA:

He had been introduced to Dr. Homi Bhabha during his last leg of tenure in F.C. College. Bhabha was quite impressed by Kosambi's scholarship and invited him to join the Tata Institute of Fundamental Research (TIFR) as Professor of Mathematics. He joined the TIFR on the 1st June, 1945. The appointment was financially beneficial to him since he got a salary of 800/- against Rs.140 he was getting from Ferguson'. The atmosphere in the institute was free from politics and other irritants prevailing in other Universities. The atmosphere was conducive to his creative work.

The new appointment brought him more recognition. In the 34th session of Indian Science Congress held in January 1947 presided over by Pandit Nehru, Kosambi was chosen to head the discussions on Mathematics.

Soon after independence he got an opportunity to tour England and America as a UNESCO Fellow.

Thus he went on a long tour in 1948-49. He studied all theoretical and technical aspects of the computer an electronic calculating machine that it then was. The Chicago University had extended an invitation to him as a guest professor of Geometry. He worked out a complete course of 36

lectures on the subject of Tensor Analysis for the students during the winter session of 1949.

KOSAMBI MEETS EINSTEIN

He also spent some time in Princeton at the Institute of Advanced Studies. The biggest attraction of this institute was the presence of Albert Einstein who was the senior most professors there. He had the opportunity of a long discussion with the great scientist. Before this meeting Kosambi had published a few research papers on mathematical problems in connection with relativity. So Kosambi could discuss these problems along with the Theory of Integrated Field on which Einstein was working at that time. Kosambi also met many young Indian mathematicians working at the Princeton University at that time. Some of them became colleagues of Kosambi as Bhabha had invited them to join TIFR.

During his short stay in London on his way back he was acquainted with an important person, Professor Basham, a historian, busy in research at the London University. (Professor Basham has produced a lot of important works on Ancient Indian History.) Kosambi was meeting him for the first time but it developed later into a long - lasting friendship.

Kosambi thus seems to have become more active in related fields since he resumed as a mathematics professor in TIFR. At the same time his multifarious work in other fields of knowledge continued without interruption. TIFR seems to have encouraged him to carry on this work in addition to that in mathematics.

Kosambi was a short - tempered and egoistic person. He seldom got on well with his colleagues and supervisors. This happened in TIFR as well. His relations with Bhabha started turning sour in 1949. Many other famous persons, Masani, Ramanathan, Prof Fernando Levy, Prof. Chendrasekaran had joined TIFR. More students and scholars were attracted towards them and Kosambi with just two or three students over several years was getting side - tracked.

Kosambi's involvement with world Peace Movement further alienated him in TIFR. He began participating in the world Peace Congress held in 1950 under Leftist's influence. Though the Indian Government was committed to World Peace, they were wary of the Peace conference because it was organized by the communists.

SHARES DAIS WITH GR

Kosambi participated in many public meetings to establish contact with masses on World Peace between 1950 and 1955. In one such meeting held in Mumbai he shared the dais with Dr. G. Ramachandran, Founder of Gandhigram.

No govt. honours or homage or promotion came his way during his long service of 17 years till he left the TIFR in 1962.

KOSAMBI'S WRITINGS ON INDIAN HISTORY

The sources of ancient history were restricted to stories, poetry and Puranas (Mythical stories of gods and goddesses) but very little of historical information. Unlike other civilized societies Indian culture has sustained for millennia in this country. Other ancient cultures like the Roman, the Egyptian and the Mesopotamian cultures in comparison with ours were extinct long since but they have left behind a lot of reliable historical information. It is a paradox that very little reliable history of the Indian culture which is sustained till today can be gleaned from the plentiful ancient literature. This paradox posed a challenge to Kosambi.

Kosambi overcame this problem by a study of anthropology and linguistics along with making direct field observations related to it. The long investigation stretching over 15 years culminated into the publication of 'Introduction to the Study of Indian History'. The Popular Publication of Bombay published this tome of over 400 pages with 60 odd photographs in the year 1956 and it was instantly recognized as an important work in Indian history. With this publication Kosambi developed a lasting interest in research in the field of Indian History. This volume seems to link together all his multifarious research work in Indian History into a common strand.

In its preface Kosambi writes, (q24) 'This book does not pretend to be a history of India. It is merely a modern approach to the study of Indian History, written in the hope that readers may be impelled to study history themselves, or at least be enabled to look at the country with greater sympathy and understanding '.

The volume is full of important details; and the details make an extremely interesting reading because of Kosambi's aggressive and sparkling wit and subtle imagination. Kosambi's outlook, quite different from that of the established historians, was capable of illuminating the already known facts in a different glow but the sheer details as such had many limitations. His field observations were restricted in general to Maharashtra and to the Deccan Plateau in particular. His study in the other branches too remained unaided and single-handed and was outside the pale of the established institutions or the research world. Many historians have pointed out short- comings in the details he gives. Others have found his analysis too skewed and exaggerated. The details he gives and the analysis he offers seem inadequate in the light of later fresh research. But Kosambi had reached much beyond this common level and made a solid contribution by giving a novel, modern outlook and a holistic method to the study of history. He established a new trend of research in Indian history and was honoured as the historian of historians. From now on Indian historical research took a different path under Kosambi's direct or indirect influence. This is predominantly revealed in this book.

KOSAMBI ON SCIENCE & TECHNOLOGY

'Most of us are so engrossed in science and technology that we are no more aware of its utilization in life. There are three aspects of its reference to utility - political, economic and social. Science and technology are not bound within the borders of nations. This makes the surroundings in which it is used most important for us. Political atmosphere is a very important component. Most of the backward nations were intimidated for a very long

time by the colonizers; in fact the basic cause of their backwardness is their exploitation by these foreign colonists.'

He very forcefully affirmed his stand that our background, our context is quite different from that of the western people and simply imitating them or treading in their footprints will not help. We have to search for and adopt an alternative path appropriate to our circumstances. Many grand and ostentatious projects were planned and executed just to imitate the west or to help our elite overcome their feeling of inferiority in comparison to their foreign counterparts. These projects were a drain on our limited national resources. We should, instead, choose technology from the utility point of view that would be appropriate to fulfill our immediate needs as well as our long term plans of development.

WEAK POINTS

He had his weak points. He was in the habit of gulping too many pills. His sister Manorama Sathe thought that he was rather a chicken hearted moaner and used to make a lot of fuss over even a slight indisposition. He did not follow his father's Gandhian style of simple living. He traveled only by first class in trains. He was fond of good food and enjoyed treating his friends lavishly. He spent huge amounts on books and journals. He was in correspondence with many eminent persons abroad and his correspondence was all through air mail letters

(In 1940s and 1950s there was no email, air-post was very costly).

Kosambi's Magnum Opus titled *"Culture and Civilization of Ancient India in Historical outline"* was published in the year 1965 in England by Rutledge and Keganpaul.

The text of the book – 210 is pages followed by an Index running to 33 pages making a total of 243 pages. There are drawings on farming, stone tools, coins etc on 16 pages, 6 maps – take 10 pages (some spread over two pages) and 198 plates of structures, animals, tribal population, seals, coins, festivals etc. Never before, or never since, a book on History had so many pages of visual presentation.

HERE ARE SOME QUOTES FROM THIS GREAT BOOK:

"The basis of any formal culture must lie in the availability of food supply beyond that needed to support the actual food producers. To build the imposing ziggurat temples of Mesopotamia, the Great wall of China, the Pyramids of Egypt, or modern skyscrapers, there must have been a correspondingly imposing surplus of food at that time. Production depends upon the techniques and instruments used – means of production. The method by which surplus, not only surplus food but all other produce, passes into the hands of ultimate user is determined by and in turn determines the form of society, the ' relations of production'. The negligible surplus of primitive food gatherers is often divided and shared out by the women of gathering group. With further development, the apportioning is the function of the patriarch, tribal chief, head of the clan often through

family units. When the surplus is large and concentrated, a great temple or Pharaoh many decide upon its gathering and distribution, through priestly guilds or nobility".

"Those who want to know the country's past have to move from cities to the country side".

"At the lowest end we still have purely tribal groups, many of whom are in a food gathering stage. The surrounding general society is now food producing. So food gathering for these very low castes generally turns into begging and stealing. Such nether most groups were accurately labeled the 'Criminal tribes' by the British in India, because they refused as a rule to acknowledge law and order outside the tribe."

The stratification of Indian society reflects and explains a great deal of Indian History if studied in the field without prejudice. It can easily be shown that many castes owe their lower social and economic status to their present or former refusal to food production and plough agriculture. The lowest castes often preserve tribal rites, usages and myths. A little higher up we see these religious observances and legends in transition, often by assimilation of other tradition. Another step above, they have been re-written by Brahmins to suit themselves, and to give the Brahmin caste predominance in the priesthood, which in the lower castes is not in the hands of Brahmins. Still higher we come to what is called 'Hindu' culture the literate traditions that often go back to much older times".

"The religions themselves do not constitute history, but their rise and change of function is excellent historical material. Indian society seemed to develop more by successive religious transformation than by violence …Most of the surviving ancient Indian documents are overwhelmingly religious and ritualistic. The writers were not concerned with history or with reality. Trying to extract history from them without previous knowledge of actual structure of the Indian society at the time of writing gives either no results or ludicrous conclusions that may be read in most 'histories' of India."

"Sale of village produce is mostly in the hands of middlemen who are at the same time money lenders. Their grip on the rural economy and the resulting indebtedness of the peasantry is a problem still untouched by any agency, government or private, except for the usual empty schemes on paper (Not much change in the situation it is only much worse – Farmers committing suicide in 1990s and since the year 2,000)".

GIFT OF INSIGHT

Kosambi had the gift of insight. He presents ordinary facts known to us in an extraordinary perspective. Look at this statement in the opening section of this book.

"A dispassionate observer who looks at India with detachment and penetration would be struck by two mutually contradictory features; diversity and unity at the same time.

The endless variety is striking, often incongruous, costume, speech, the physical appearance of the people, customs, standards of living, food, climate; geographical features all offer the greatest possible differences ….A

dozen languages and scripts appear on currency notes. There is no National language or alphabet no Indian race. People with white skin and blue eyes are as unmistakably Indian as others with black eyes and dark skins. There is no typical Indian diet but they eat more rice and vegetables. There are vegetarians and non-vegetarians; perpetual snows in Himalayas, north European weather in Kashmir, hot deserts in Rajasthan, tropical weather in southern India, ever green forests".

KOSAMBI JOINS CSIR

Two years after he had left TIFR, he was as appointed Scientist Emeritus of CSIR affiliated to the Maharashtra Vigyanvardhini in Pune in 1964. He was offered a monthly honorarium of Rs.1000/- in addition to grant for research. Kosambi was not very happy with the appointment since he was expecting to be appointed a National Professor.

He continued to write a number of articles. Mention may be made of

"Ashok, Stambh, Enigma of Benares," 'Historical Krishna' published in Time Magazine, articles on Numismatics. Mathematics etc in various international journals.

ACTIVE TILL THE LAST DAY:

He was active till the last day of his life. He was discussing about a number of projects with his friends in the last week of June. On the 28th June 1966 his medical check up showed he was hale and hearty. But he did not get up from his bed on the 29th morning having died in his sleep in the small hours due to a heart failure.

Except one or two, all his unfinished jobs remained so. Many of his finished jobs too could not see the light of the day. 'Living Prehistory in India' was published in the February 1967 issue of the Scientific American while the critical edition of 'Avimarak' was published in 1969 in the names of Kosambi and Mason jointly. The manuscript of ' Number Theory' was lost (pp104) while the ' Hump on Nandi's back' remained unpublished till May 2008 when Lakshmi Seva Sangham, Gandhigram brought out a bilingul English Tamil edition. In June 2008 Bharat Gyan Vigyan Samiti has published a Hindi – English edition.)

IMPACT OF KOSAMBI'S WORKS

The impact of his work, however, continued growing after his death. Eight years after his death, in 1947, three books honouring Kosambi were published. As many as 14 years after his death, in the year 1980, he was decorated with the 'Hari Om Ashram Award' by University Grants Commission for bringing to light the mutual relationship between science and society. The freshness of his ideas and thoughts has not reduced one bit even nearly half a century after his demise. Last, but not least year long celebration has been arranged for his centenary in Pune beginning from July, 2007. The inaugural lecture was delivered by Romilla Thapar a famous

Historian. Prabhat Patnaik and Irtan Habih have delivered talks. The last in the series would be in June 2008. Pune University would bring out a publication of these 12 lectures.

Prime Minister of India has sanctioned a Chair in the name of Kosambi with an amount of Rs. One crore in Pune University. He has also announced the release of a postal stamp in Kosambi's honour.

ABOUT KOSAMBI'S FATHER

His father Acharya Dharmananda Kosambi was also a very famous person. He was born in the year 1876. From his early twenties, he was drawn to Buddhist religion. As advised by Bandera, Dharmananda toured Nepal, Burma and Sri Lanka for a study of that religion. During this tour he also mastered Pali language. He returned to Calcutta in 1904. He became a Bhikshu (Buddhist Monk) formally. He again started wandering from Calcutta to Kushinara, to Buddhagaya, to Rajagriha, to Shravasti, to Kapilavastu, to Lumbijeevan – all places of Buddhist pilgrimage.

HARVARD ASSIGNMENTS

Dharmananda got an assignment to teach Pali language in Harvard University in 1910. He returned to India in 1912. He received a repeat offer from Harvard in 1918. This time as a Professor of Pali language. This assignment was four years upto 1922.

GUJARAT VIDYAPEETH & ASSOCIATION WITH GANDHI

On his return to India in 1922 he joined the Gujarat Vidyapeeth started by Mahatma Gandhi as Professor of Archaeology. **He taught Pali in Leningrad University during the year 1929.**

He was a close associate of Mahatma Gandhi during his famous Dandi yatra. He was in regular correspondence with the Mahatma. Gandhi also had a soft corner for Dharmananda. His health was poor. He decided to end his life by 'Maranatic Sallekhan' meaning a voluntary fast unto death. He died in the year 1947 when he was 70 years old.

(M. R. Rajagopalan)
Secretary Gandhigram Trust
Place: Gandhigram, India
Date: 9th June 2008.